

What is claimed is:

1. A digital sensor for monitoring the wear of the lining material of disc brakes, which sensor is to be attached at the end of an adjustment shaft of an adjusting mechanism for adjusting the position of brake pads in relation to the brake disc, which sensor comprises at least two code parts (2, 3, 13, 15, 20, 22, 29, 31, 44, 45, 46, 50, 51, 52, 57, 58), of which one (2, 13, 20, 29, 44, 50, 57) is rotated continuously by rotation of the adjustment shaft (11), characterized in that the code part rotating continuously is a code wheel (2, 13, 20, 29, 44, 50, 57) and that the other code parts are one or more sliding parts in the form of a code rack (3, 46, 51, 52), a sleeve (15, 22, 31) etc. which is moved in a linear fashion and/or one or more code wheels (45, 58).
2. The sensor of claim 1, characterized in that the code parts (3, 15, 22, 31, 46, 51, 52) not rotated continuously by the rotation of the adjustment shaft are moved intermittently by the rotation of the adjustment shaft.
3. The sensor of claim 1 or 2, characterized in that it further comprises detectors (5, 6, 24, 35, 36) directed towards the code parts (2, 3, 13, 15, 20, 22, 29, 31, 44, 45, 46, 50, 51, 52, 57, 58), a connection part (1, 18, 19, 27) of one of the code wheels (2, 13, 20, 29) drivingly connected to the adjustment shaft of the disc brake and a PCB (Printed Circuit Board) (4, 14, 21, 30); and that the code parts have code paths turned towards the detectors (5, 6, 24, 35, 36) of the PCB (4, 14, 21, 30).
4. The sensor of claim 3, characterized in that the code on the one or more code wheels (2, 13, 20, 29, 44, 45, 50, 57, 58) and/or one or more sliding parts (3, 15, 22, 31, 46, 51, 52), respectively are formed by magnets (7, 8), by light and dark sectors or by holes or no holes.

5. The sensor of claim 3 or 4, characterized in that the detectors (5, 6, 24, 35, 36) are received on the PCB (4, 14, 21, 30); that the PCB (4, 14, 21, 30) has circuitry to relate the signals from the detectors (5, 6, 24, 35, 36) to the actual wear of the lining material of the brake; that the two or more code parts (2, 3, 13, 15, 20, 22, 29, 31, 44, 45, 46, 50, 51, 52, 57, 58) are arranged on the same side of the PCB (4, 14, 21, 30) or on opposite sides of the PCB (4, 14, 21, 30); and/or that a Graycode is used.
6. The sensor of any of the claims 3 to 5, characterized in that the detectors (5, 6, 24, 35, 36) are optical detectors, magnetic sensors or mechanical switches.
7. The sensor of claim 6, characterized in that the detectors are magnetoresistive sensors or hall effect sensors.
8. The sensor of any of the previous claims, characterized in that the code wheel (2, 29, 44, 50) rotated continuously by the adjustment shaft or a part (18, 23) drivingly connected to the code wheel (13, 20), has a finger (9, 16, 28) for co-operation with teeth (10, 38, 49, 52, 54) of the sliding part (3, 15, 22, 31, 46, 51, 52) and that the finger (9, 16, 28) is arranged to advance the sliding part (3, 15, 22, 31, 46, 51, 52) a distance corresponding to one tooth for each turn of the code wheel (2, 13, 20, 29, 44, 50).
9. The sensor of any of the claims 3 to 7, characterized in that seven detectors (5, 6, 24, 35, 36) are arranged on the PCB (4, 14, 21, 30) for reading of up to four different paths on each of the code wheels (2, 13, 20, 29, 44, 45, 50, 57, 58) and the sliding part (3, 15, 22, 31, 46, 51, 52).
10. The sensor of claim 8 or 9, characterized in that a part drivingly connected to the adjustment shaft (11) or an extension of the adjustment shaft (11) is received in a slot (37) of the sliding part (15, 22) and/or that a clamp

(25, 32) is biased by means of a spring (26, 33) against teeth (43) of the sliding part (22, 31).

11. The sensor of any of the previous claims, characterized in that it comprises three code parts (44, 45, 46; 50, 51, 52).

12. The sensor of claim 11, characterized in that the three code parts are two code wheels (44, 45) and one code rack (46).

13. The sensor of claim 11, characterized in that the three code parts are one code wheel (50) and two code racks (51, 53).

14. The sensor of any of the claims 1, or 3 to 10, characterized in that it comprises two code wheels (57, 58).